

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Singh, et al.

Serial No.: 10/688, 797

Confirmation No.: 2637

Filed:

October 17, 2003

For:

Silicon-Containing Layer

Deposition with Silicon

Compounds

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Group Art Unit: 160

Examiner:

Unknown

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited on February 10, 2004 with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

2/10/04

Signatu

## INFORMATION DISCLOSURE STATEMENT

The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-1449.

If the sum of \$180.00 is due under 37 CFR § 1.17(p) pursuant to § 1.97, the Commissioner is hereby authorized to charge this fee, and any other fee necessary

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to make this submission timely, to the Deposit Account No. 20-0782/AMAT/7729/KMT.

Respectfully submitted,

Keith M. Tackett

Registration No. 32,008

MOSER, PATTERSON & SHERIDAN, L.L.P.

3040 Post Oak Blvd. Suite 1500

Houston, TX 77056

Telephone: (713) 623-4844 Facsimile: (713) 623-4846 Attorney for Applicant(s) Please type a plus sign (+) inside this box PTO/SB/08a (08-03) Approved for use through 07/31/2006, OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Under the Paperwork Reduction 10/688,797 Substitute for form 1449A/PTQ **Application Number** FEB 1 2 2004 Filing Date October 17, 2003 INFORMATION DECLOS First Named Inventor Singh, et al. STATEMENT BY AP Group Art Unit 160 **Examiner Name** Unknown (Use as many sheets as necessary) Attorney Docket Number AMAT/7729/TCG/EPI/LE

February 10, 2004

Submission Date

U.S. PATENT DOCUMENTS							
Examiner	Cite	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where		
Initials*	No.¹	Number-Kind Code <sup>2 (f known)</sup>	MM-DD-YYYY	Applicant of Cited Document	Relevant Passages or Relevant Figures Appear		
	A1	US-6632279B1	10/14/2003	Ritala, et al.			
	A2	US-6630413B2	10/07/2003	Todd			
, ,	АЗ	US-6559520B2	05/06/2003	Matsuki, et al.			
	A4	US-6544900B2	04/08/2003	Raaijmakers, et al.			
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	No. <sup>3</sup>	Number-Kind Code <sup>2 (f known)</sup>			Where Relevant Passages or Relevant Figures Appear				
	B1 ·	WO 02/097864 A2	12/05/2002	WIPO					
	B2 ·	WO 02/080244 A2	10/10/2002	WIPO					
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INFORMATION BESCLOS STATEMENT BY APP

(Use as many sheets as necessary)

Sheet

Application Number	10/688,797
Filing Date	October 17, 2003
First Named Inventor	Singh, et al.
Group Art Unit	160
Examiner Name	Unknown
Attorney Docket Number	AMAT/7729/TCG/EPI/LE
Submission Date	February 10, 2004

		<del>100</del> 1 2	U.S. PATENT	DOCUMENTS	
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	A1	US-6305314B1	10/23/2001	Sneh, et al.	
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February 10, 2004

1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. 10/688,797 Application Number Substitute for form 1449A/PTQ FEB 1 2 2004 Filing Date October 17, 2003 INFORMATION DECLOS First Named Inventor Singh, et al. STATEMENT BY AP Group Art Unit 160 Unknown **Examiner Name** (Use as many sheets as necessary) Attorney Docket Number AMAT/7729/TCG/EPI/LE

**Submission Date** 

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Examiner Cite	Cite No.1	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant			
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	A2	US-5503875	04/02/1996	Imai, et al.				
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Initials*	No.¹	Number-Kind Code <sup>2 (if known)</sup>	MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear			
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	В3 ′	WO 01/15220 A1	03/01/2001	WIPO				
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Application Number 10/688,797

Filing Date October 17, 2003

First Named Inventor Singh, et al.

Group Art Unit 160

Examiner Name Unknown

Attorney Docket Number AMAT/7729/TCG/EPI/LE

February 10, 2004

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Sheet 4 of 9

			U.S. PATENT	DOCUMENTS	
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	A1	US-20030089308A1	05/15/2003	Raaijmakers	riguies Appeal
	A2	US-20030082300A1	05/01/2003	Todd, et al.	
	A3	US-20030072975A1	04/17/2003	Shero, et al.	
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	A17	US-20020155722A1	10/24/2002	Satta, et al.	
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Initials*	No.¹	Number-Kind Code <sup>2 (f known)</sup>			Where Relevant Passages or Relevant Figures Appear				
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 9

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ÑΤ	Group Art Unit	160	Ī
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	A1	US-20020098627A1	07/25/2002	Pomarede, et al.	
	A2	US-20020093042A1	07/18/2002	Oh, et al.	
	A3	US-20020076837A1	06/20/2002	Hujanen, et al.	
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	B1 ,	JP58098917	06/13/1983	JAPANESE					
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**Examiner Name** 

Attorney Docket Number

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	U.S. PATENT DOCUMENTS							
Examiner	Cite	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where			
Initials*	No.¹	Number-Kind Code <sup>2 (I known)</sup>	MM-DD-YYYY	Applicant of Cited Document	Relevant Passages or Relevant Figures Appear			
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	FOREIGN PATENT DOCUMENTS						
Examiner	Cite	Foreign Patent Document	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>	
Initials*	No.¹	Number-Kind Code <sup>2 (f known)</sup>	MM-DD-YYYY	Applicant of Cited Document			
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	B4	JP1270593	10/27/1989	JAPANESE			
	B5	JP1-143221	06/05/1989	JAPANESE			

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February 10, 2004

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Submission Date

	U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.1	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant		
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Initials*	No. <sup>1</sup>	Number-Kind Code <sup>2 (if known)</sup>	MM-DD-YYYY					
	B1	EP 1 150 345 A2	10/31/2001	EUROPEAN				
	B2							
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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T²
	C1	Argarwal, et al. "Challenges in Integrating the High-K Gate Dielectric Film to the Conventional CMOS Process Flow," Mat. Sec. Soc. Sump. Proc. Vol. 670 (2001)	
	C2	Bedair, "Atomic Layer Epitaxy Deposition Processes," J. Vac. Sci. Technol. B., Vol. 12, No. 1, Jan/Feb 1994	
	C3	Choi, et al. "The Effect of Annealing on Resistivity of Low Pressure Chemical Vapor Deposited Titanium Diboride," J. Appl. Phys. 69(11), 1 June 1991	
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	C8	Hwang, et al. "Nanometer-Size α-PbO <sub>2</sub> -type TiO <sub>2</sub> in Garnet: A Thermobarometer for Ultrahigh-Pressure Metamorphism," Science Vo. 288 (14 Apr 2000)	
	C9	Jeong, et al. "Plasma-assisted Atomic Layer Growth of High-Quality Aluminum Oxide Thin Films," Jpn. J. Appl. Phys. 1, Regul. Pap. Short Notes, Vol. 40, No. 1, Jan 2001	-
	C10	Jeong, et al. "Growth and Characterization of Aluminum Oxide Al <sub>2</sub> O <sub>3</sub> Thin Films by Plasma-assisted Atomic Layer Controlled Deposition," J. Korean Inst. Met. Mater., Vol. 38, No. 10, Oct. 2000	
	C11	Imai, et al. Jpn. J. Appl. Phys., 30 (1991) 3646.	

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INFORMATION DISCLOSURE

STATEMENT BY APPLICATION

Application Number 10/688,797

Filing Date October 17, 2003

First Named Inventor Singh, et al.

Group Art Unit 160

Unknown

(Use as many sheets as necessary)

Sheet 9 of 9 Submission Date February 10, 2004

**Examiner Name** 

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	C12	Lee, et al. "Cyclic Technique for the Enhancement of Highly Oriented Diamond Film Growth," Thin Solid Films 303 (1997) 264-269					
	C13	Lubben, <i>et al.</i> "Mechanisms and kinetics of Si atomic-layer epitaxy on Si(001)2X1 from Si₂H <sub>6</sub> ," J. Vac. Sci. Technol. A 9 (6), Nov/Dec 1991, 3003-3011.	•				
	C14	Min, et al. "Metal-organic Atomic-layer Deposition of Titanium-silicon-nitride Films," Applied Physics Letters, Vol. 75, No. 11 (11 Sep 1999)					
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	C16	Paranjpe, et al. "Atomic Layer Deposition of AlO <sub>x</sub> for Thin Film Head Gap Applications," J. Electrochem. Soc., Vol. 148, No. 9, Sep. 2001					
	C17	Ritala, et al. "Atomic Layer Deposition of Oxide Thin Films with Metal Alkoxides as Oxygen Sources," Science Vol. 288 14 Apr 2000					
	C18	Suda, et al. "Adsorption and thermal dissociation of disilane (Si <sub>2</sub> H <sub>6</sub> ) on Si(100)2X1," J. Vac. Sci. Technol. A8 (1), Jan/Feb 1990, 61-67.					

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